CLAIMS

1. A method of applying photo-luminescent pigment to a substrate, said method including:

preparing a dry powder formulation comprising, at least, a photo-luminescent pigment and a carrier/fixer;

depositing the dry powder formulation onto a substrate surface; and,

heating the dry powder formulation to fuse it to the substrate surface.

2. A method as claimed in any preceding claim wherein the substrate surface has depressions or channels adapted to receive the dry powder formulation.

3. A method as claimed in claim 2 which further includes applying a light reflecting layer to the substrate surface before depositing the dry powder formulation.

4. A method as claimed in any one of claims 1 to 3 wherein the volume ratio of photo-luminescent pigment to carrier/fixer in the dry powder formulation is such that the fused material exhibits substantially the same strength and durability properties of the carrier/fixer while still exhibiting the photo-luminescent properties of the pigment.

5. A method as claimed in claim 4 wherein the volume ratio is substantially in the range of 1% to 35% photo-luminescent pigment to carrier/fixer.

AMENDED SHEET
IPEA/AU

6. A method as claimed in any preceding claim wherein the dry powered formulation is heated to a temperature recommended by the manufacturer of the carrier/fixer until the formulation is molten.

7. A method as claimed in claim 6 wherein the formulation is heated to substantially between 160 to 210 degrees centigrade.

8. A method as claimed in claim 6 or claim 7 wherein the formulation is heated for approximately 10 to 20 minutes.

9. A method as claimed in any preceding claim wherein after heating the formulation is cooled.

10. A method as claimed in any preceding claim wherein the carrier/fixer is a heat curable polymer.

11. A method as claimed in any preceding claim wherein the dry powder formulation includes small quantities of additives, such as a de-gassing additive, to ensure a smooth surface finish.

12. A method as claimed in any preceding claim wherein the substrate is stamped, extruded or milled aluminium or metal.

13. An apparatus for applying photo-luminescent pigment to a substrate, said apparatus including:

a hopper adapted to contain a dry powder formulation;

one or more orifices adapted to allow transfer of the dry powder formulation from the hopper to a substrate surface;

a guide rail system for locating the substrate surface in both a fixed horizontal plane and a fixed vertical plane below the hopper and orifice; and a heat-curing system for providing enough heat to turn the dry powder formulation into a molten mix.

14. An apparatus as claimed in claim 13 which also includes a cooling system to cool the molten mix.

15. An apparatus as claimed in any one of claims 13 or 14 which also includes a drive system to move the substrate through the apparatus.

16. An apparatus as claimed in any one of claims 13 to 15 which includes a support roller mounted directly beneath the orifice(s) and hopper to support the substrate.

17. An apparatus as claimed in any one of claims 13 to 16 which includes an adjustable mounting bracket adapted to enable the hopper to be located in the correct position so that the orifice(s) lines up with the substrate.

18. An apparatus as claimed in any one of claims 13 to 17 wherein the orifice is adapted to communicate snugly with the substrate surface such that the dry powder formulation is deposited substantially only where required.

19. An apparatus as claimed in any one of claims 13 to 18 which includes a mechanism for tapping the hopper so that any rat-holes in the dry powder formulation are re-filled.

20 An apparatus as claimed in any one of claims 13 to 19 which includes a brush mounted below the roller, and with its bristles in contact with the roller, so that any powder that falls onto the roller is subsequently brushed off.

21. An apparatus as claimed in any one of claims 13 to 20 wherein the heat-curing system is an oven.

22. An apparatus as claimed in any one of claims 13 to 21 wherein the heat-curing system is a continuous oven process.

23. An apparatus as claimed in claim 22 wherein the oven includes infra-red heating elements.

24. An apparatus as claimed in any one of claims 13 to 23 which includes an automatic loading and unloading means at each end.

25. A method of applying photo-luminescent pigment to a substrate as herein described with reference to the examples.

26. An apparatus for applying photo-luminescent pigment to a substrate as herein described with reference to the accompanying drawings.

27. A substrate bearing photo luminescent material when prepared using a method according to any one of claims 1 to 12 and 25.

28. A substrate bearing photo luminescent material when prepared using an apparatus according to any one of claims 13 to 24 and 26.

29. A step nosing, or insert strip for a step nosing, bearing photo luminescent material when prepared using a method according to any one of claims 1 to 12 and 25.

30. A step nosing, or insert strip for a step nosing, bearing photo luminescent material when prepared using an apparatus according to any one of claims 13 to 24 and 26.

31. A handrail, or insert strip for a handrail, bearing photo luminescent material when prepared using a method according to any one of claims 1 to 12 and 25.

32. A handrail, or insert strip for a handrail, bearing photo luminescent material when prepared using an apparatus according to any one of claims 13 to 24 and 26.

END B7

AMD B8 >